

*Amendments to the Claims*

The listing of claims will replace all prior versions, and listings of claims in the application.

1-135. (cancelled)

136. (currently amended) A method for detecting the presence of a target ~~molecule~~ nucleic acid in a biological or environmental sample comprising:

(a) incubating ~~[[a]]~~ said nucleic acid template with an initiator, a target site probe specific for a region on said nucleic acid, and an RNA-polymerase wherein the nucleic acid and target site probe hybridize and form a bubble complex;

(b) synthesizing multiple copies of detectable oligonucleotide transcripts through abortive reiterative synthesis on the nucleic acid ~~template~~ wherein the RNA polymerase extends said initiator until said oligonucleotide transcript is terminated wherein ~~the RNA polymerase releases said oligonucleotide transcript without substantially translocating from the polymerase binding site~~ and reinitiates abortive transcription ~~on the template~~, thereby synthesizing multiple copies of said oligonucleotide transcripts through abortive reiterative synthesis; and

(c) detecting said oligonucleotides, thereby determining the presence of said target nucleic acid ~~molecule~~ in said sample.

137. (previously presented) The method of claim 136, wherein said abortive reiterative synthesis is abortive RNA transcription on a DNA template.

138. (cancelled)

139. (previously presented) The method of claim 136, wherein said transcript termination occurs through nucleotide deprivation.

140. (previously presented) The method of claim 136, wherein said transcript termination occurs through incorporation of a nucleotide analog.

141. (previously presented) The method of claim 136, wherein said transcript termination occurs because of a specific transcription termination signal in the template.

142. (cancelled)

143. (currently amended) The method of claim 136 142, wherein said target site probe and said ~~target molecule~~ nucleic acid form two substantially complementary strands that form a transcription bubble region in the presence of an RNA polymerase.

144. (currently amended) The method of claim 136 142, wherein said target site probe and said ~~target molecule~~ nucleic acid form a bubble complex comprising a first double-stranded region, a second region of two unpaired strands, and a third region which is double-stranded.

145. (cancelled)

146. (cancelled)

147. (cancelled)

148. (previously presented) The method of claim 140, wherein said sample is a biological sample.

149. (previously presented) The method of claim 140, wherein said sample is an environmental sample.

150. (new) A method for detecting the presence of a protein in a biological or environmental sample comprising:

(a) attaching an abortive promoter cassette to said protein wherein the abortive promoter cassette comprises one or more oligonucleotides selected from the group consisting of

- (i) one self-complementary contiguous oligonucleotide to which RNA polymerase can bind to form a transcription bubble;
- (ii) two partially complementary oligonucleotides that form a transcription bubble from which the initiator and the RNA polymerase synthesize the reiterative transcript; and
- (iii) two complementary oligonucleotides that form a transcription bubble in the presence of an RNA polymerase, from which the initiator and the RNA polymerase synthesize the reiterative transcript;

(b) incubating the abortive promoter cassette with an initiator and an RNA-polymerase;

(c) synthesizing multiple copies of detectable oligonucleotide transcripts through abortive reiterative synthesis on the abortive promoter cassette wherein the RNA polymerase extends said initiator until said oligonucleotide transcript is terminated and reinitiates abortive transcription on the abortive promoter cassette template, thereby synthesizing multiple copies of said oligonucleotide transcripts through abortive reiterative synthesis; and

(d) detecting said oligonucleotides, thereby determining the presence of said protein in said sample.

151. (new) The method of claim 150, wherein said abortive reiterative synthesis is abortive RNA transcription on a DNA template.

152. (new) The method of claim 150, wherein said transcript termination occurs through nucleotide deprivation.

153. (new) The method of claim 150, wherein said transcript termination occurs through incorporation of a nucleotide analog.

154. (new) The method of claim 150, wherein said transcript termination occurs because of a specific transcription termination signal in the template.

155. (new) The method of claim 150, wherein said sample is a biological sample.

156. (new) The method of claim 150, wherein said sample is an environmental sample.

157. (new) A method for detecting the presence of a target nucleic acid in a biological or environmental sample comprising:

(a) incubating said nucleic acid with an initiator, and an RNA-polymerase and an abortive promoter cassette wherein the abortive promoter cassette hybridizes with the nucleic acid and comprises one or more oligonucleotides selected from the group consisting of

(i) two partially complementary oligonucleotides that form a transcription bubble from which the initiator and the RNA polymerase synthesize the reiterative transcript; and

(ii) two complementary oligonucleotides that form a transcription bubble in the presence of an RNA polymerase, from which the initiator and the RNA polymerase synthesize the reiterative transcript;

(b) synthesizing multiple copies of detectable oligonucleotide transcripts through abortive reiterative synthesis on the nucleic acid template wherein the RNA polymerase extends said initiator until said oligonucleotide transcript is terminated and reinitiates abortive transcription on the template, thereby synthesizing multiple copies of said oligonucleotide transcripts through abortive reiterative synthesis wherein the transcripts are selected from the group consisting of 2 to about 26 nucleotides, about 26 to about 50 nucleotides and about 50 nucleotides to about 100 nucleotides in length; and

(c) detecting said oligonucleotides, thereby determining the presence of said target molecule in said sample.

158. (new) The method of claim 157, wherein said abortive reiterative synthesis is abortive RNA transcription on a DNA template.

159. (new) The method of claim 157, wherein said transcript termination occurs through nucleotide deprivation.

160. (new) The method of claim 157, wherein said transcript termination occurs through incorporation of a nucleotide analog.

161. (new) The method of claim 157, wherein said transcript termination occurs because of a specific transcription termination signal in the template.

162. (new) The method of claim 157, wherein said sample is a biological sample.

163. (new) The method of claim 157, wherein said sample is an environmental sample.